

CLAIMS

1. Process for preparing a crosslinked polyolefin foam, **characterized in that** it comprises an essentially unidirectional expansion.
- 5 2. Process according to Claim 1, **characterized in that** it comprises the expansion of a product having substantially the shape of a sheet, the expansion being only in its thickness.
3. Process according to Claim 2, **characterized in that** it is carried out continuously.
- 10 4. Process according to one of Claims 1 to 3, **characterized in that** the unidirectional expansion is carried out by making a support adhere beforehand to one or both faces of the intermediate product to be expanded, these being perpendicular to the direction of the expansion.
- 15 5. Process according to Claim 4, **characterized in that** the adhesion to the support is promoted by a prior corona discharge operation.
6. Process according to one of Claims 1 to 3, **characterized in that** the unidirectional expansion is carried out by surface-
- 20 crosslinking beforehand one or both faces of the intermediate product to be expanded, these being perpendicular to the direction of the expansion.
7. Process according to one of Claims 1 to 6, **characterized in that** the foam is obtained from a composition comprising at
- 25 least 20% by weight of a polyethylene or of an essentially linear ethylene copolymer of density of between 0.80 and 0.96 g/cm³.
8. Process according to Claim 7, **characterized in that** the polyethylene or the ethylene copolymer is obtained by metallocene catalysis and has a density of at most 0.92 g/cm³.
- 30 9. Compliant crosslinked polyolefin foam obtained by implementing the process according to one of Claims 1 to 8.